



FACT SHEET

FETAL ALCOHOL SPECTRUM DISORDERS

History of Fetal Alcohol Spectrum Disorders

For centuries people have known that alcohol can harm a fetus; however, it wasn't until 1899 that an actual medical link was identified. Dr. William Sullivan compared the pregnancy outcomes of 120 alcoholic prisoners with 28 of their relatives. The infant mortality rate among the alcoholic women was higher.ⁱ

In 1957, Jaqueline Rouquette wrote about prenatal alcohol exposure. Then in 1968, Dr. Paul Lemoine published a study in which he described 127 children with distinctive facial features and other symptoms related to prenatal alcohol exposure.ⁱⁱ Five years later, researchers in Seattle published findings of a similar study and named the condition fetal alcohol syndrome (FAS).ⁱⁱⁱ

Definition of Fetal Alcohol Spectrum Disorders

Experts now know that the effects of prenatal alcohol exposure extend beyond FAS. "Fetal alcohol spectrum disorders" (FASD) is an umbrella term describing the range of effects that can occur in an individual whose mother drank alcohol during pregnancy. These effects may include physical, mental, behavioral, and/or learning disabilities with possible lifelong implications. FASD is not a diagnostic term used by clinicians.

It refers to conditions such as:

- Fetal alcohol syndrome (FAS), including partial FAS
- Fetal Alcohol effects (FAE)
- Alcohol-related neuron-developmental disorder (ARND)
- Alcohol-related birth defects (ARBD)

Fetal Alcohol Syndrome

FAS consists of a pattern of neurologic, behavioral, and cognitive deficits which may interfere with growth, learning and socialization. FAS has four major components:

- A characteristic pattern of facial abnormalities (small eye openings, indistinct or flat philtrum, thin upper lip)
- Growth deficiencies, such as low birth weight
- Brain damage, such as small skull at birth, structural defects, and neurological signs, including impaired fine motor skills, poor eye-hand coordination, and tremors
- Maternal alcohol use during pregnancy

Behavioral or cognitive problems may include mental retardation; learning disabilities; hyperactivity; poor impulse control; and social, attention, language, and memory deficits.

Partial FAS describes persons with confirmed alcohol exposure, facial anomalies, and one other group of symptoms (growth retardation, central nervous system defects or cognitive deficits).

Fetal Alcohol Effects

FAE describes children with prenatal alcohol exposure who do not have all the symptoms of FAS. Many have growth deficiencies, behavior problems, cognitive deficits and other symptoms. They do not, however, have the facial features of FAS. Although the term FAE is still used, the Institute of Medicine has coined more specific terms that include alcohol-related, neurodevelopmental disorder and alcohol-related birth defects.

Alcohol-Related Neurodevelopmental Disorders

Alcohol-related neurodevelopmental disorder (ARND) refers to various neurological abnormalities, such as problems with communication skills, memory, learning ability, visual and spatial skills, intelligence and motor skills. Children with ARND have central nervous system deficits but not all the physical features of FAS. Their problems may include sleep disturbances, attention deficits, poor visual focus, increased activity, delayed speech, and learning disabilities.

Alcohol-Related Birth Defects

Alcohol-related birth defects describe defects in the skeletal and major organ systems. Virtually every defect has been described in some patient with FAS, including holes in the heart, underdeveloped kidneys and fused bones. Defects can involve abnormalities of the heart, eyes, ears, kidneys and skeleton.

Cause of FASD

The only cause of FASD is alcohol use during pregnancy. When a pregnant woman drinks, the alcohol crosses the placenta into the fetal blood system. Thus, alcohol reaches the fetus, its developing tissues and organs. This is how brain

damage occurs, which can lead to mental retardation, social and emotional problems, learning disabilities, and other challenges.

Alcohol consumption is not safe during pregnancy. All types of alcohol (beer, wine, hard liquor, wine cooler, etc.) are equally dangerous when consumed during pregnancy.

Prevalence of FASD

FASD occurs in about 10 per 1,000 live births, or about 40,000 babies per year. FAS, the most recognized condition in the spectrum, is estimated to occur in 0.5 to 2 of every 1,000 live births.^{iv} It now outranks Down syndrome and autism in prevalence.

Assessment of FASD

It is extremely difficult to diagnose a fetal alcohol spectrum disorder. A team of professionals is needed, including a physician, psychologist, speech pathologist, and physical or occupational therapist. Diagnostic tests may include physical exams, intelligence tests, occupational and physical therapy, psychological, speech and neurological evaluations.

Diagnosis is easier if the birth mother confirms alcohol use during pregnancy. However, FAS can be diagnosed without confirming maternal alcohol use, if all the symptoms are present.

Impact of FASD

Children with FASD often grow up with social and emotional problems. They may have mental illness or substance abuse problems, struggle in school, and become involved with the corrections system. Costs of FAS alone are estimated at between \$1 million and \$5 million per child, not including incarceration. This estimate does

not include cost to society, such as lost productivity, burden on families, and poor quality of life.^v

The preceding information is from a fact sheet entitled "The Language of Fetal Alcohol Spectrum Disorders" published by the Center for Excellence, Center for Substance Abuse Prevention, Substance Abuse and Mental Health Services Administration, and used with permission. For more information regarding Fetal Alcohol Spectrum Disorder, contact them at (866) 786-7327 or visit www.fascenter.samhsa.gov.

ⁱ Abel, E. L. 1990, *Fetal Alcohol Syndrome*. Oradell, MJ: Medical Economics.

ⁱⁱ Lemoine, P.; Harousseau, H.; Borteyru, J.-P., et al. 1968. Children of alcohol parents; Abnormalities observed in 127 cases. *Quest Medical* 21:476-483

ⁱⁱⁱ Jones, K. L. and Smith, D. W. 1973. Recognition of the fetal alcohol syndrome in early infancy. *Lancet* 2:999-1001

^{iv} May, PA, and Gossage, J. P. 2001. Estimating the prevalence of fetal alcohol syndrome: A summary. *Alcohol research & Health* 25(3):159-167.

^v Kellerman, C., and Kellerman, T. 1999. The five million dollar baby: The economics of FAS. (<http://come-over.to/FAS/economicsFAS.htm> on 04/04/02).